

IN THE CLAIMS

1. (Currently Amended) A method for providing quality of service (QoS)-driven channel access within a basic service set (BSS) in a wireless network, the method comprising ~~steps of:~~

determining at a point coordinator (PC) station of the BSS whether at least one of up-stream traffic and side-stream traffic is scheduled to be transmitted from at least one non-PC station in the BSS;

determining at the PC station whether at least one transmission opportunity (TO) is available during a contention free period (CFP) of a superframe for transmitting one of up-stream traffic and side-stream traffic in the BSS, the superframe containing the CFP and a contention period (CP);

allocating at least one available TO to a selected non-PC having at least one of up-stream traffic and side-stream traffic to transmit; and

sending a multipoll frame containing information relating to at least two allocated TOs from the PC station containing information relating to each allocated TO, the multipoll frame identifying each respective allocated TO by a duration time and one of a virtual stream identifier (VSID) and an association identifier (AID).

2. (Original) The method according to claim 1, wherein the duration time for a TO is a maximum length of time for the TO.

3. (Original) The method according to claim 1, wherein a first TO begins a short interframe spacing (SIFS) period of time after an end of the multipoll frame.

4. (Currently Amended) The method according to claim 1, wherein ~~the multipoll frame contains information relating to at least two allocated TOs~~, each successive TO ~~starting~~ starts after a preceding TO when a duration time associated with the preceding TO expires.

5. (Original) The method according to claim 1, wherein the multipoll frame contains information relating to at least two allocated TOs,

wherein when a data frame that is indicated to be a final data frame is transmitted in a selected TO, a TO that is subsequent to the selected TO begins a short interframe spacing (SIFS) period of time after the preceding station sends the final data frame.

6. (Original) The method according to claim 5, wherein the TO that is subsequent to the selected TO ends when a duration time associated with the TO that is subsequent to the selected TO ends.

7. (Original) The method according to claim 6, wherein when the TO that is subsequent to the selected TO is a last TO identified in the multipoll frame, any remaining time is returned for reallocation by the PC station.

8. (Original) The method according to claim 1, wherein the multipoll frame includes information relating to at least one VSID and the duration time;

the method further comprising steps of:

receiving the multipoll frame at a non-PC station for which an available TO was allocated; and

transmitting from the non-PC station at least one data frame during the TO allocated to the non-PC station, the at least one data frame being associated with the VSID.

9. (Original) The method according to claim 8, wherein the at least one data frame is part of an up-stream traffic.

10. (Original) The method according to claim 8, wherein the at least one data frame is part of a side-stream traffic.

11. (Original) The method according to claim 8, wherein the at least one data frame transmitted by the non-PC station originates from one of a continuous/periodic flow type of traffic source, a discontinuous/bursty flow type of traffic source, and a best-effort/asynchronous traffic source.

12. (Original) The method according to claim 1, wherein the multipoll frame includes information relating to at least one VSID and the duration time;

the method further comprising steps of:

receiving the multipoll frame at a non-PC station for which an available TO was allocated; and

transmitting from the non-PC station at least one data frame during the TO allocated to the non-PC station, the at least one data frame being associated with a selected VSID that is different from the VSID identified in the multipoll frame, and the at least one data frame being transmitted based on a comparison of a QoS parameter set associated with the selected VSID and a QoS parameter set associated with the VSID identified in the multipoll frame.

13. (Original) The method according to claim 1, wherein the multipoll frame includes information relating to at least one AID and the duration time;

the method further comprising steps of:

receiving the multipoll frame at a non-PC station for which an available TO was allocated; and

transmitting from the non-PC station at least one data frame during the TO allocated to the non-PC station, the at least one data frame being transmitted based completely on a determination made by a frame scheduling entity (FSE) of the non-PC station.

14. (Original) The method according to claim 1, wherein the wireless network is a wireless local area network (WLAN).

15. (Currently Amended) A point coordinator (PC) station in a basic service set (BSS) in a wireless network, the PC station comprising:

a frame scheduling entity (FSE) determining whether at least one of up-stream traffic and side-stream traffic is scheduled to be transmitted from at least one non-PC station in the BSS, the FSE determining whether at least one transmission opportunity (TO) is available during a contention free period (CFP) of a superframe for transmitting one of up-stream traffic

and side-stream traffic in the BSS, the superframe containing the CFP and a contention period (CP), the FSE allocating at least one available TO to a selected non-PC having at least one of up-stream traffic and side-stream traffic to transmit; and

a transmitter sending a multipoll frame containing information relating to at least two allocated TOs from the PC station containing information relating to each TO allocated by the FSE, the multipoll frame identifying each respective allocated TO by a duration time and one of a virtual stream identifier (VSID) and an association identifier (AID).

16. (Original) The PC station according to claim 15, wherein the duration time for a TO is a maximum length of time for the TO.

17. (Original) The PC station according to claim 15, wherein a first TO begins a short interframe spacing (SIFS) period of time after an end of the multipoll frame.

18. (Currently Amended) The PC station according to claim 15, wherein ~~the multipoll frame contains information relating to at least two allocated TOs~~, each successive TO starting starts after a preceding TO when a duration time associated with the preceding TO expires.

19. (Currently Amended) The PC station according to claim 15, wherein the multipoll frame contains information relating to at least two allocated TOs,

wherein when a data frame that is indicated to be a final data frame is transmitted in a selected TO, a TO that is subsequent to [t] the selected TO begins a short interframe spacing (SIFS) period of time after the preceding station sends the final data frame.

20. (Original) The PC station according to claim 19, wherein the TO that is subsequent to the selected TO ends when a duration time associated with the TO that is subsequent to the selected TO ends.

21. (Original) The PC station according to claim 15, wherein the multipoll frame includes information relating to at least one VSID and the duration time;

the PC station further comprising a non-PC station in the BSS receiving the multipoll frame, the non-PC station being a non-PC station for which an available TO was allocated, the non-PC station transmitting at least one data frame during the TO allocated to the non-PC station.

22. (Original) The PC station according to claim 21, wherein the at least one data frame is part of an up-stream traffic.

23. (Original) The PC station according to claim 21, wherein the at least one data frame is part of a side-stream traffic.

24. (Original) The PC station according to claim 21, wherein the at least one data frame transmitted by the non-PC station originates from one of a continuous/periodic flow type of traffic source, a discontinuous/bursty flow type of traffic source, and a best-effort/asynchronous traffic source.

25. (Original) The PC station according to claim 15, wherein the multipoll frame includes information relating to at least one VSID and the duration time;

the PC station further comprising a non-PC station in the BSS receiving the multipoll frame, the non-PC station being a non-PC station for which an available TO was allocated, the PC station transmitting at least one data frame during the TO allocated to the non-PC station, the at least one data frame being associated with a selected VSID that is different from the VSID identified in the multipoll frame, and the at least one data frame being transmitted based on a comparison of a QoS parameter set associated with the selected VSID and a QoS parameter set associated with the VSID identified in the multipoll frame.

26. (Currently Amended) The PC station according to claim 15, wherein the multipoll frame includes information relating to at least one AID and the duration time;

the PC station further comprising a non-PC station in the BSS receiving the multipoll frame, the non-PC station being a non-PC station for which an available TO was

allocated, and the non-PC station transmitting from the non-PC station at least one data frame during the TO allocated to the non-PC station, the at least one data frame being transmitted based completely on a determination made by the FSE of the non-PC station. [.]

27. (Original) The PC station according to claim 15, wherein the wireless network is a wireless local area network (WLAN).

IN THE ABSTRACT

ABSTRACT OF THE DISCLOSURE

A method and a system are disclosed for providing quality of service (QoS)-driven channel access within a basic service set (BSS) in a wireless network. ~~It is determined at a~~ A point coordinator (PC) station ~~of the BSS~~ determines whether at least one of up-stream traffic and side-stream traffic is scheduled to be transmitted from at least one non-PC station ~~in the BSS~~. The PC station ~~then determines whether at least one transmission opportunity (TO) is available during a contention free period (CFP) of a superframe for transmitting one of up stream traffic and side stream traffic in the BSS. The superframe contains the CFP and a contention period (CP).~~ At least one available TO is allocated to a each selected non-PC having at least one ~~of up stream traffic and side stream~~ traffic to transmit. A multipoll frame containing information relating to at least two allocated TOs is then sent from the PC station containing information relating to each allocated TO. ~~The multipoll frame identifies each respective allocated TO by a duration time and one of a virtual stream identifier (VSID) and an association identifier (AID). According to one aspect, the multipoll frame contains information relating to at least two allocated TOs, and each successive TO starts after a preceding TO when a duration time associated with the preceding TO expires. According to another aspect, the multipoll frame contains information relating to at least two allocated TOs so that when a data frame that is indicated to be a final data frame is transmitted in a selected TO, a TO that is subsequent to the selected TO begins a short interframe spacing (SIFS) period of time after the preceding station sends the final data frame.~~